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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,066	04/21/2004	Frank Gong	1741 / SYMBP192US	5955
7590 Amin & Turocy, LLP National City Center 24th Floor 1900 E. 9th Street Cleveland, OH 44114			EXAMINER AU, GARY	
			ART UNIT 2617	PAPER NUMBER
			MAIL DATE 11/01/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/829,066	GONG ET AL.	
	Examiner	Art Unit	
	Gary Au	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-14 and 16-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-14 and 16-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Remarks, filed 8/21/2007, with respect to the rejection(s) of claim(s) 1-5, 7-14 and 16-22 under US Patent No. 6,950,680 (Kela et al.) and US Patent No. 6,115,616 (Halperin et al.) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of US Patent No. 6,950,680 Kela et al. (Kela), US Patent No. 6,115,616 Halperin et al. (Halperin) and US Patent No. 5,537,673 Nagashima et al. (Nagashima).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 8, 10-14, 16-18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,950,680 Kela et al. (Kela) and further in view of US Patent No. 6,115,616 Halperin et al. (Halperin) and US Patent No. 5,537,673 Nagashima et al. (Nagashima).

Considering claim 1, Kela teaches a key pad assembly (figure 5, col. 3 line 63 – col. 4 line.9) comprising: a top cover placed over a stack of keypad components (figure

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5, col. 3 line 63 – col. 4 line 9); and a bottom cover placed under the stack (figure 5, col. 3 line 63 – col. 4 line 9); the top cover and the bottom cover over molded around the stack to form a key pad unit (figure 5, col. 3 line 63 – col. 4 line 9). However, Kela does not teach a self contained key pad unit.

In an analogous art, Halperin teaches a self contained key pad unit (keyboard card 16 – figure 1, col. 2 lines 35-41).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Kela's system to include a self contained key pad unit, as taught by Halperin, for the advantage of adapting to different devices.

However, the combined system of Kela and Halperin does not teach an identification component that identifies the key pad to a device that hosts the self contained key pad unit.

In an analogous art, Nagashima teaches an identification component that identifies the key pad to a device that hosts the self contained key pad unit (col. 6 lines 11-23, wherein Nagashima teaches entering a predetermined code that identifies the removable panel to the car stereo).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the combined system of Kela and Halperin to include an identification component that identifies the key pad to a device that hosts the self contained key pad unit, as taught by Nagashima, for the advantage of identifying a removable panel to a car stereo (col. 2 lines 21-30).

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Considering claim 11, Kela teaches a method of fabricating a key pad comprising: sandwiching a plurality of key pad components between a top cover and a bottom cover (figure 5, col. 3 line 63 – col. 4 line 9); and insert molding around the key pad components for an encapsulation thereof between the top cover and the bottom cover (figure 5, col. 3 line 63 – col. 4 line 9). However, Kela does not teach a self contained key pad unit.

In an analogous art, Halperin teaches a self contained key pad unit (keyboard card 16 – figure 1, col. 2 lines 35-41).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Kela's system to include a self contained key pad unit, as taught by Halperin, for the advantage of adapting to different devices.

However, the combined system of Kela and Halperin does not teach an identification component that identifies the key pad to a device that hosts the self contained key pad unit.

In an analogous art, Nagashima teaches an identification component that identifies the key pad to a device that hosts the self contained key pad unit (col. 6 lines 11-23, wherein Nagashima teaches entering a predetermined code that identifies the removable panel to the car stereo).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the combined system of Kela and Halperin to include an identification component that identifies the key pad to a device that hosts the self

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contained key pad unit, as taught by Nagashima, for the advantage of identifying a removable panel to a car stereo (col. 2 lines 21-30).

Considering claim 16, Kela teaches a key pad comprising: a stack comprising: a membrane with a plurality of keys placed thereupon (key pad membrane 36 – figure 3, col. 4 lines 10-33), a printed circuit board position beneath the membrane (col. 4 lines 10-33); a top cover placed over the stack (figure 5, col. 3 line 63 – col. 4 line 9); and a bottom cover placed under the stack (figure 5, col. 3 line 63 – col. 4 line 9), the top cover and the bottom cover define a common boundary around the stack (figure 5, col. 3 line 63 – col. 4 line 9, where the side of the covers overlaps and create a sealed boundary), the common boundary over molded to encapsulate the stack between the bottom cover and the top cover (figure 5, col. 3 line 63 – col. 4 line 9). However, Kela does not teach a self contained key pad unit.

In an analogous art, Halperin teaches a self contained key pad unit (keyboard card 16 – figure 1, col. 2 lines 35-41).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Kela's system to include a self contained key pad unit, as taught by Halperin, for the advantage of adapting to different devices.

However, the combined system of Kela and Halperin does not teach an identification component that identifies the key pad to a device that hosts the self contained key pad unit.

In an analogous art, Nagashima teaches an identification component that identifies the key pad to a device that hosts the self contained key pad unit (col. 6 lines 11-23, wherein Nagashima teaches entering a predetermined code that identifies the removable panel to the car stereo).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the combined system of Kela and Halperin to include an identification component that identifies the key pad to a device that hosts the self contained key pad unit, as taught by Nagashima, for the advantage of identifying a removable panel to a car stereo (col. 2 lines 21-30).

Considering claim 22, Kela teaches a key pad comprising: means for encapsulating a stack of key pad components between a top and bottom cover to form a stand alone key pad unit (figure 5, col. 3 line 63 – col. 4 line 9); and means for connecting the stand alone key pad unit to a host device (figure 5, col. 3 line 63 – col. 4 line 9). However, Kela does not teach a self contained key pad unit.

In an analogous art, Halperin teaches a self contained key pad unit (keyboard card 16 – figure 1, col. 2 lines 35-41).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Kela's system to include a self contained key pad unit, as taught by Halperin, for the advantage of adapting to different devices.

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However, the combined system of Kela and Halperin does not teach an identification component that identifies the key pad to a device that hosts the self contained key pad unit.

In an analogous art, Nagashima teaches an identification component that identifies the key pad to a device that hosts the self contained key pad unit (col. 6 lines 11-23, wherein Nagashima teaches entering a predetermined code that identifies the removable panel to the car stereo).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the combined system of Kela and Halperin to include an identification component that identifies the key pad to a device that hosts the self contained key pad unit, as taught by Nagashima, for the advantage of identifying a removable panel to a car stereo (col. 2 lines 21-30).

Considering claims 2, 12 and 21, Kela teaches the top cover and the bottom sandwich the stack (figure 5, col. 3 line 63 – col. 4 line 9).

Considering claims 3, 17 and 18, Kela teaches the top cover and the bottom cover are over molded to create a sealed common boundary (figure 5, col. 3 line 63 – col. 4 line 9, where the side of the covers overlaps and create a sealed boundary).

Considering claim 4, Kela teaches the stack comprises a printed circuit board with a flex member (col. 4 lines 10-33), an electro luminous panel (28 – figure 3, col. 4

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lines 10-33), a silicone membrane with a plurality of keys (key pad membrane 36 – figure 3, col. 4 lines 10-33), placed on top of each other (figure 4, col. 3 line 63 – col. 4 line 9).

Considering claims 5 and 14, Kela teaches the flex member provides an electrical connection between the key pad unit and a device that hosts the self contained key pad unit (col. 4 lines 10-33). However, Kela does not teach a self contained key pad unit.

In an analogous art, Halperin teaches a self contained key pad unit (keyboard card 16 – figure 1, col. 2 lines 35-41).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Kela's system to include a self contained key pad unit, as taught by Halperin, for the advantage of adapting to different devices.

Considering claim 8, Kela teaches the bottom cover with a recess that houses a speaker therein (figure 5, col. 4 lines 10-33).

Considering claim 10, Kela teaches an illumination color or a brightness on a surface of the keypad indicates a mode of the key pad (col. 1 lines 19-35).

Considering claim 13, Kela teaches housing a speaker in a recess of the bottom cover (figure 5).

Considering claim 20, Kela teaches the bottom cover contacts the printed circuit board (figure 5, col. 3 line 63 – col. 4 line 9).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,950,680 Kela et al. (Kela), US Patent No. 6,115,616 Halperin et al. (Halperin) and US Patent No. 5,537,673 Nagashima et al. (Nagashima) as applied to claim 1 above, and further in view of US Patent No. 5,841,857 Zoiss et al. (Zoiss).

Considering claim 7, the combined system of Kela and Halperin teaches the key pad assembly of claim 1 as described above, but fails to disclose a trough.

In an analogous art, Zoiss teaches a trough (col. 4 lines 38-67, col. 5 lines 41-51 and col. 7 lines 37-47).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the combined system of Kela and Halperin to include a trough, as taught by Zoiss, for the advantage of forming the desiccant-retaining section of the carrier (col. 4 lines 38-53).

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,950,680 Kela et al. (Kela), US Patent No. 6,115,616 Halperin et al. (Halperin) and US Patent No. 5,537,673 Nagashima et al. (Nagashima) as applied to claim 1 above, and further in view of US Patent No. 5,517,683 Collett et al. (Collett).

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Considering claim 9, the combined system of Kela and Halperin teaches the key pad assembly of claim 1, but fails to disclose the top cover and bottom cover fabricated from one of polycarbonates, thermoset plastics, and thermoformed plastic.

In an analogous art, Collett teaches the top cover and bottom cover fabricated from polycarbonates (col. 6 lines 17-32).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Kela's system to include the top cover and bottom cover fabricated from polycarbonates, as taught by Collett, for the advantage of higher impact resistance (col. 6 lines 17-32).

6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,950,680 Kela et al. (Kela), US Patent No. 6,115,616 Halperin et al. (Halperin) and US Patent No. 5,537,673 Nagashima et al. (Nagashima) as applied to claim 18 above, and further in view of US Patent no. 6,785,395 Arneson et al. (Arneson).

As to claim 19, Kela teaches the bottom cover connected to a speaker (figure 5). However, Kela fails to teach the speaker is a piezo electric speaker.

In an analogous art, Arneson teaches the speaker is a piezo electric speaker (col. 5 lines 29-46).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Kela's system to include a piezo electric speaker, as

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taught by Arneson, for the advantage of a high free-air resonant frequency (col. 1 lines 40-52).


Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary Au whose telephone number is (571) 272-2822. The examiner can normally be reached on 8am-5pm Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on (571) 272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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10/29/07